United States Department of Agriculture | Agricultural Research Service | National Program Staff | Beltsville, Maryland 20705

SUBJECT: Determining the Invasiveness of the Whittet Cultivar of Kikuyu Grass, *Pennisetum clandestinum*

TO: Richard L. Dunkle, Deputy Director
Animal and Plant Health Inspection Service

THROUGH: D. R. Buxton, Deputy Administrator DRB

J. B. St. John, Associate Deputy Administrator JBS
Crop Production, Product Value, and Safety

FROM: Evert K. Byington, National Program Leader 2/5/02 EKB
Rangeland, Pasture and Forages

Ernest S. Delfosse, National Program Leader 2/5/02
Weed Science

Background

The United States Department of Agriculture-Animal and Plant Health Inspection Service (USDA-APHIS), Plant Protection and Quarantine (PPQ), is in the process of determining if the Whittet variety of kikuyu grass (KG) should be subject to the regulatory controls of the *Federal Noxious Weed Act*. Mr. Don Eykamp, a private sector grower, wishes to market the Whittet variety. The wild variety of KG is highly invasive and is classified as a noxious weed. The issue is if the Whittet variety would have the same invasive properties as the wild variety if removed from the noxious weed list and allowed to be planted widely.

APHIS has examined this issue for Mr. Eykamp previously. Most recently, on March 16, 1999, USDA-APHIS convened an independent panel of scientific experts to review the scientific literature on KG, with emphasis on the Whittet variety. The terms of reference for the review included an examination of the genetics and potential invasiveness of Whittet. The panel concluded that Whittet, which has been used commercially since 1970, is genetically distinct from other ecotypes and cultivars, but that molecular techniques should be used to substantiate this point. Further, the panel recommended that experiments should be conducted to determine the hybridization and adaptation potential of KG. Finally, due to lack of published scientific information, the panel found no evidence about the invasiveness of Whittet, but noted that other cultivars of seeded

KG are invasive. PPQ cited lack of scientific data on invasiveness of Whittet as the basis of their decision that it should not be removed from the noxious weed list.

Mr. Eykamp disputes the panel's findings and subsequent APHIS action. On October 25, 2001, Dr. Richard Dunkle, Deputy Administrator, PPQ, asked the USDA-Agricultural Research Service (ARS), the intramural research arm of the Department, to review and assess the information relative to this issue in the context: "1. Should Whittet be removed from, or remain on, the noxious weed list based on the information and data provided and additional information received from contacts you may have made? Your evaluation of the potential risks compared to overall benefits, including risk mitigation measures would be very helpful. For that matter, should the wild form of kikuyu grass remain classified as a noxious weed based on its climatic preferences and biological/ecological properties? 2. If you feel that the scientific evidence is still inconclusive, what specific experiments will have to be conducted in your opinion to appropriately evaluate the potential invasiveness of Whittet necessary to make a regulatory decision?"

Extensive material from both APHIS and Mr. Eykamp was provided to ARS for review. The material included scientific literature and much anecdotal information. Input to this issue was sought from the Federal Interagency Committee on Noxious and Exotic Weeds and from other colleagues, and a four-hour meeting was held with Mr. Eykamp on December 14, 2001, for a complete discussion of the issues from his viewpoint. Subsequently, Mr. Eykamp recommended several additional contacts. After careful evaluation of all information, ARS offers the following advice for consideration by APHIS to develop rules based on sound science:

1. Based on published scientific studies, data clearly support that the wild type of KG is clearly invasive and should *not* be removed from the noxious weed list.

2. Some of the predictions of the potential invasiveness of Whittet may be based on the wild KG, which could overstate the invasive potential of Whittet. However, most studies on Whittet are anecdotal and/or are too short-term on which to base a sound scientific recommendation regarding the invasiveness of Whittet.

3. ARS recommends three research projects to resolve this issue: (a) a two-year study clarifying chemical mitigation strategies; (b) as recommended in the 1999 review, a molecular study of the genetic diversity of Whittet *vs.* the KG wild type and all other cultivars; and (c) a three-year field study on the biology, ecology and invasiveness of Whittet, conducted in the eastern and southern Gulf states and Texas.

4. USDA-APHIS should reconsider the listing of KG when the results of this research are known.